

Tao Huang

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EDUCATION

The Chinese University of Hong Kong, Hong Kong, China

Aug. 2022 – Present

Ph.D. in Computer Science and Engineering, advised by Qi Dou

- Research focus: sample efficiency, long-horizon reasoning abilities, and policy generalization of (robotic) deep reinforcement learning

ShanghaiTech University, Shanghai, China

Sep. 2018 – July 2022

B.S. in Computer Science and Technology, GPA: 3.75 (5/253)

- Research focus: multi-player multi-armed bandits learning, vision-based reinforcement learning
- Coursework: Machine Learning (A+), Reinforcement Learning (A+), Convex Optimization (A+), Numerical Optimization (A), Matrix Computation (A+), Linear Algebra (A+), Probability and Mathematical Statistics (A+), Mathematical Analysis (A), Discrete Mathematics (A), Communication Systems (A), Signals and Systems (A-)

PUBLICATIONS

- **Tao Huang**, Kai Chen, Wang Wei, Jianan Li, Yonghao Long, Qi Dou (2023). Value-Informed Skill Chaining for Policy Learning of Long-Horizon Tasks with Surgical Robot. ([Submitted to IROS 2023](#))
- **Tao Huang**, Kai Chen, Bin Li, Yun-Hui Liu, Qi Dou (2023). Demonstration-Guided RL with Efficient Exploration for Task Automation of Surgical Robot. International Conference on Robotics and Automation. ([ICRA 2023](#))
- Yonghao Long, Wang Wei, **Tao Huang**, Yuehao Wang, Qi Dou (2023). Human-in-the-loop Embodied Intelligence with Interactive Simulation Environment for Surgical Robot Learning. ([Submitted to RA-L 2023](#))
- **Tao Huang**, Jiachen Wang, Xiao Chen (2022). Accelerating Representation Learning with View-Consistent Dynamics in Data-Efficient Reinforcement Learning. ([Preprint 2022](#))
- Yinxu Tang, **Tao Huang**, Xi Huang, Ziyu Shao, and Yang Yang (2022). Learning-Aided Stable Matching for Switch Controller Association in SDN Systems. IEEE International Conference on Communications. ([ICC 2022](#))

HONORS AND AWARDS

Outstanding Graduates Award, Shanghai	July. 2022
Outstanding Graduates Award, ShanghaiTech University	July. 2022
Second Prize in Chinese Undergraduate Mathematical Contest in Modeling, China	Dec. 2020
First Class Scholarship (Top 2%) of ShanghaiTech University	Nov. 2019, 2020, 2021
Outstanding Student (Top 5%) of ShanghaiTech University	Nov. 2019, 2020, 2021

EXPERIENCES

Shanghai Qizhi Institute, Research Intern (Advisor: Yi Wu)

Mar. 2022 – June 2022

- Build block stacking environment with Franka Panda robot in PyBullet
- Train RL policy in the simulated environment, distill state-based policy into image-based policy, and adopt domain randomization for sim2real transfer

IID Lab, Research Intern (Advisor: Ziyu Shao)

Dec. 2019 – May. 2021

- Model the problem of switch-controller association as multi-player multi-armed bandit problem.
- Propose LS2M scheme with effective integration of stable matching and bandit learning.
- Achieve a sublinear time-averaged regret bound theoretically and conduct simulations to verify the performance

PROGRAMMING SKILLS

Programming: Python, MatLab, PyTorch

Data Analysis: Seaborn, Matplotlib, Pandas, Numpy

Developer Tools: Linux, LaTeX, Github